DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

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Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 1.28

WELDING INSPECTION REPORT

Resident Engineer: Siegenthaler, Peter
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-026214
Date Inspected: 30-Aug-2011

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: American Bridge/Fluor Enterprises, a JV

OSM Arrival Time: 700
OSM Departure Time: 1730
Location: Job Site

CWI Name: John Pagliero and Steve Mc Connell

CWI Present:	☑ Yes	☐ No					
Inspected CWI report:	☐ Yes	☑ No	☐ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☑ Yes	☐ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☐ No	☑ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: SAS Tower

Summary of Items Observed:

Caltrans Office of Structural Material (OSM) Quality Assurance Inspector (QAI) Joselito Lizardo was present at the Self Anchored Suspension (SAS) job site as requested to perform observations on the welding of components for the San Francisco Oakland Bay Bridge (SFOBB) Project.

At Tower Base Elevation Electro Slag Welding (ESW) T-joint E-041 location ‘R’, QA randomly ABF welder Richard Garcia continuing to perform 3G SMAW first time welding repair (R1) on the visually (VT) detected defect on the surface of the vertical weld of the ESW. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8” diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repair Rev. 2. The boat shape repair excavation located at Y=1435mm to Y=1710mm was excavated to dimensions of 275mm long x 60mm wide x 40mm deep. The excavation was previously tested using Magnetic Particle Testing (MT) by ABF QC Steve Mc Connell and this QA with linear indications still exist after 40mm deep excavation. The repair excavation and the adjacent base metal was preheated and maintained to more than 204°C (400°F) using Miller Proheat Induction Heating System with the heater blankets placed at the other side of the repair. During the shift, ABF QC John Pagliero was noted monitoring the welder. Measured welding parameter during welding was 140 amperes on a 1/8” diameter E7018H4R electrode. At the end of the shift, repair welding was still continuing and should remain tomorrow. The welder has programmed the Miller Proheat 35 Induction Heating System to hold the preheat of 400°F for three hours and cool down at 150°F per hour as recommended by ABF.

At Tower Base Elevation Electro Slag Welding (ESW) T-joint N-041 location ‘N’, QA randomly ABF welder Jeremy Dolman continuing to perform 3G SMAW first time welding repair (R1) on the Ultrasonic Testing (UT)

detected defect on the vertical weld of the ESW. The welder was observed welding in the 3G (vertical) position utilizing Shielded Metal Arc Welding (SMAW) with 1/8" diameter E7018H4R electrode implementing welding procedure ABF-WPS-D15-1000-Repair Rev. 2. The boat shape repairs located at Y=3020mm was excavated to dimensions of 200mm long x 45mm wide x 40mm deep and at Y=3220mm with excavation dimensions of 200mm long x 45mm wide x 28mm deep. The excavations were tested using Magnetic Particle Testing (MT) by ABF QC John Pagliero and this QA with positive result. The repair excavation and the adjacent base metal was preheated and maintained to more than 204°C (400°F) using Miller Proheat Induction Heating System with the heater blankets placed at the other side of the repair area. During the shift, ABF QC John Pagliero was noted monitoring the welder. Measured welding parameter during welding was 110 amperes on a 1/8" diameter E7018H4R electrode. At the end of the shift, repair welding on the two excavations was still continuing and should remain tomorrow. The welder has programmed the Miller Proheat 35 Induction Heating System to hold the preheat of 204°C (400°F) for three hours and cool down at 150°F per hour as recommended by ABF.

Other related activities include initial Visual Test (VT) and MT by ABF QC on weld cover of various ESW locations (i.e. 'J', 'K', 'P' and 'Q'). It was noted later during the shift that QC has marked a lot of grinding/fixing to be done on the covers due to various surface defects like overlap, undercut and unacceptable cover profile. Grinding of the weld cover as marked by QC is now underway.

At ESW locations 'A' and 'E', ABF welder Rory Hogan was noted carbon air arc gouging the bottom weld access hole after the sump block removal. The weld access holes were previously cut using the thermal lance cutting but they were so rough and not cut to 100mm radius as required.

At ESW locations 'P', 'Q', 'V' and 'T', ABF QC John Pagliero was observed performing Magnetic Particle Testing (MT) on the bottom radius weld access holes. These holes were cut from the bottom of the ESW where the sump block was put in place to serve as starting point for the ESW. The MT result on three (3) weld access holes 'P', 'Q', 'V' were positive except on one hole 'T' where linear indication was noted and gouged surface left not ground. This QA performed MT verification on the radius of the mentioned bottom weld access holes and noted same result.

At Tower Base Electro Slag Welding (ESW) T-joint #E-041 location 'R', ABF personnel were noted using the Miller Proheat 35 Induction Heating System to preheat and maintain the required temperature during SMAW welding repair on welded ESW.

WELDING INSPECTION REPORT

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Summary of Conversations:

No significant conversation ocurred today.

Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact SMR Nina Choy 510-385-5910, who represents the Office of Structural Materials for your project.

Inspected By:	Lizardo,Joselito	Quality Assurance Inspector
Reviewed By:	Levell,Bill	QA Reviewer